

WHAT IS CLAIMED IS:

5 1. A method for enhancing the function of normal or abnormal excitable tissue in a mammal comprising administering peripherally to said mammal a peripherally effective excitable tissue enhancing amount of an EPO, an EPO receptor activity modulator, an EPO-activated receptor modulator, or combination thereof.

2. The method of Claim 1 wherein said enhancing the function of excitable tissue results in the enhancement of associative learning or memory.

10 3. The method of Claim 1 wherein said enhancing the function of excitable tissue is used in the treatment of mood disorders, anxiety disorders, depression, autism, attention deficit hyperactivity disorder, Alzheimer's disease, aging or cognitive dysfunction.

15 4. The method of Claim 1 wherein said excitable tissue is central nervous system tissue or peripheral nervous system tissue.

5. The method of Claim 1 wherein said administration comprises oral, topical, intraluminal or by inhalation or parenteral administration.

20 6. The method of Claim 5 wherein said parenteral administration is intravenous, intraarterial, subcutaneous, intramuscular, intraperitoneal, submucosal or intradermal.

25 7. The method of Claim 1 wherein said administration is acute or chronic.

8. The method of Claim 1 wherein said EPO is nonerythropoietic.

9. The method of Claim 1 wherein said EPO is administered at a dose greater than the dose necessary to maximally stimulate erythropoiesis.

30 10. The method of Claim 1, wherein said EPO is erythropoietin, an erythropoietin analog, an erythropoietin mimetic, an erythropoietin fragment, a hybrid erythropoietin molecule, an erythropoietin receptor-binding molecule, an erythropoietin agonist, a renal erythropoietin, a brain erythropoietin, an oligomer thereof, a multimer thereof, a mutein thereof, a congener thereof, a naturally-occurring form thereof, a synthetic  
35 form thereof, a recombinant form thereof, or a combination thereof.

11. The method of Claim 10 wherein said EPO receptor-binding molecule is an antibody to the erythropoietin receptor.

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